WHAT IS CLAIMED IS:

1. A method for providing virtual space for handling storage device failures in a storage system, comprising:

detecting a failure of a storage device;

allocating space for rebuilding the failed storage device's data; and

rebuilding the failed storage device's data in the allocated space.

2. The method of claim 1 further comprising:

replacing the failed storage devices with a replacement storage device; and

migrating the data rebuilt in the allocated space to the replacement storage device.

3. The method of claim 2, wherein the replacing the failed storage device comprises hot swapping a new storage device for the failed storage device.

4. The method of claim 1, wherein the allocating space further comprises allocating unused space in storage devices of the storage system remaining after the failure of the storage device.

5. The method of claim 1, wherein the allocating space further comprises allocating space in hot spares for rebuilding data on the failed storage device.

6. A method for providing virtual space for handling storage device failures in a storage system, comprising:

preallocating virtual hot spare space for rebuilding data;

detecting a failure of a storage device; and

rebuilding the failed storage device's data in the preallocated virtual host spare space.

7. The method of claim 6 further comprising placing into a general use storage pool any of the virtual hot spare space not used during rebuilding the failed storage device's data.

8. The method of claim 6 further comprising setting aside for subsequent storage device failures any of the virtual hot spare space not used during rebuilding the failed storage device's data.

9. The method of claim 8, wherein the preallocated virtual hot spare space is mirrored, parity or striped over at least one physical storage device.

10. A storage system for providing virtual space for handling storage device failures, comprising:

a processor; and

a plurality of storage devices;

wherein the processor is configured for detecting a failure of a storage device, allocating space for rebuilding the failed storage device's data and rebuilding the failed storage device's data in the allocated space.

11. The storage system of claim 10, wherein the processor is further configured for migrating the data rebuilt in the allocated space to a replacement storage device replacing the failed storage device.

12. The storage system of claim 11, wherein the processor is further configured for migrating the data rebuilt in the allocated space to a hot swapped storage device replacing the failed storage device.

13. The storage system of claim 10, wherein the processor is further configured for allocating unused space in the plurality of storage devices remaining after the failure of the storage device.

14. The storage system of claim 10, wherein the processor is further configured for allocating space in hot spares for rebuilding data on the failed storage device.

15. The storage system of claim 10, wherein the processor is disposed in a controller.

16. The storage system of claim 10, wherein the processor is disposed in a management system.

17. A storage system for providing virtual space for handling storage device failures, comprising:

a processor; and

a plurality of storage devices;

wherein the processor is configured for preallocating virtual hot spare space for rebuilding data, detecting a failure of a storage device and rebuilding the failed storage device's data in the preallocated virtual host spare space.

18. The storage system of claim 17, wherein the processor places into a general use storage pool any of the virtual hot spare space not used during rebuilding the failed storage device's data.

19. The storage system of claim 17, wherein the processor sets aside for subsequent storage device failures any of the virtual hot spare space not used during rebuilding the failed storage device's data.

20. The storage system of claim 19, wherein the preallocated virtual hot spare space is mirrored, parity or striped over at least one physical storage device.

21. A program storage device readable by a computer, the program storage device tangibly embodying one or more programs of instructions executable by the computer to perform operations for providing virtual space for handling storage device failures in a storage system, the operations comprising:

detecting a failure of a storage device;

allocating space for rebuilding the failed storage device's data; and

rebuilding the failed storage device's data in the allocated space.

22. The program storage device of claim 21 further comprising:

replacing the failed storage devices with a replacement storage device; and

migrating the data rebuilt in the allocated space to the replacement storage device.

23. The program storage device of claim 22, wherein the replacing the failed storage device comprises hot swapping a new storage device for the failed storage device.

24. The program storage device of claim 21, wherein the allocating space further comprises allocating unused space in storage devices of the storage system remaining after the failure of the storage device.

25. The program storage device of claim 21, wherein the allocating space further comprises allocating space in hot spares for rebuilding data on the failed storage device.

26. A program storage device readable by a computer, the program storage device tangibly embodying one or more programs of instructions executable by the computer to perform operations for providing virtual space for handling storage device failures in a storage system, the operations comprising:

preallocating virtual hot spare space for rebuilding data;

detecting a failure of a storage device; and

rebuilding the failed storage device's data in the preallocated virtual host spare space.

27. The program storage device of claim 26 further comprising placing into a general use storage pool any of the virtual hot spare space not used during rebuilding the failed storage device's data.

28. The program storage device of claim 26 further comprising setting aside for subsequent storage device failures any of the virtual hot spare space not used during rebuilding the failed storage device's data.

29. The program storage device of claim 28, wherein the preallocated virtual hot spare space is mirrored, parity or striped over at least one physical storage device.

30. A storage system for providing virtual hot spare space for handling storage device failures, comprising:

means for storing data thereon;

means for detecting a failure of a means for storing data thereon;

means for allocating space for rebuilding data of the failed means for storing data thereon; and

means for rebuilding the data of the failed means for storing data thereon in the allocated space.

31. A storage system for providing virtual space for handling storage device failures, comprising:

means for preallocating virtual hot spare space for rebuilding data,

means for storing data thereon;

means for detecting a failure of a means for storing data thereon; and

means for rebuilding the failed storage device's data in the preallocated virtual host spare space.